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Mental Illness and Chronic Disease in a Random Sample of Newly-Arrived Refugees and Immigrants to the U.S.

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Does Mental illnesses have an Impact on chronic diseases in a random sample of Newly-arrived Refugees & Immigrants to the U.S. ?

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Objective

To Examine:

- The prevalence of chronic diseases [**Hypertension, Heart diseases, Asthma and Diabetes**] among newly arrived refugees and immigrants to U.S.
- Predict the risk factors for each of the four chronic diseases studied.
- If self-reported mental illnesses [**Depression and PTSD**] have an impact on the occurrence of chronic diseases.

Hypothesis



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- We predicted that Iraqi **Refugees** would report **Higher Prevalence of Chronic Diseases** when compared with Arab non-Iraqi immigrants as a control group.
- We predict that **Mental Illnesses** could **have an Impact on Chronic Diseases among Refugees**, more so than immigrants.

Background



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- Research **linking** Chronic disease to Mental disorders among refugees/immigrants **is still not clear**.
- Most **prior research** on refugees/immigrant has been based on **convenience samples**; has **lacked** culturally-similar comparison groups; and was conducted years after arrival to host country.
- Most previous research on refugee has **focused** mainly on Mental Disorders, with **less emphasis** on Chronic Diseases.
- **Differences exist in the prevalence** of Chronic Diseases between refugees from different countries and between refugees and immigrants or the U.S. norm population (higher or lower).

Methods



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- A random sample of Iraqi refugees (**n=298**) & convenient random sample of Arab immigrants (Not Iraqi) (**n=313**) were participates in this study.
- **The recruitment criteria:**
 - Age 18 years or above
 - Less than one year since entering U.S. for refugees and a maximum of 2 years for immigrants.
- **The instruments was translated into Arabic language and re-translated into English to ensure reliability.**

■

Methods



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- Participants were **interviewed** using a different standards questionnaire. E.g.
- **Pre-migration trauma exposure** . The Harvard Trauma Questionnaire (HTQ; Mollica et al., 1992) was used to assess pre-migration trauma exposure (39 self-report items).
- **PTSD symptoms** was used to assess the civilian version of the PTSD checklist (PCL-C), which includes 17 self-report items).
- **Depression symptoms** were assessed by the 7-item depression subscale of the Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983)

Methods



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- The question on the four **Chronic Diseases** was as follows:
 - “Have you been diagnosed by your doctor with any of the following?”
- The four chronic diseases were listed for the participant to choose as applies, with either “yes”, “no”, or “don’t know” for each disease.
- **Current stressor** (based on a Likert-type scale, a 5-point scale ranging from 1(Not at all) to 5).
- **Binary logistic regression modeling was used** in estimating the strength of the association between refugees and immigrants in the presence or absence of each chronic disease as well as determining the predictors of for each chronic disease

Non Significant Demography Variables among study population

Variable	Immigrant (n=313)x	Refugees (n=298)x
Age / Mean (SD)	33.4(11.28)	32.4(11.52)
Gender		
Female	135(43%)	137(46)
Male	179(57%)	161(54%)
Drink alcohol		
Don't drink alcohol	62(20%)	60(20%)
Drink alcohol	248(80%)	238(80%)
Tobacco consumption		
Don't smoke tobacco	218(69%)	190(64%)
Smoke tobacco	96(31%)	108(36%)

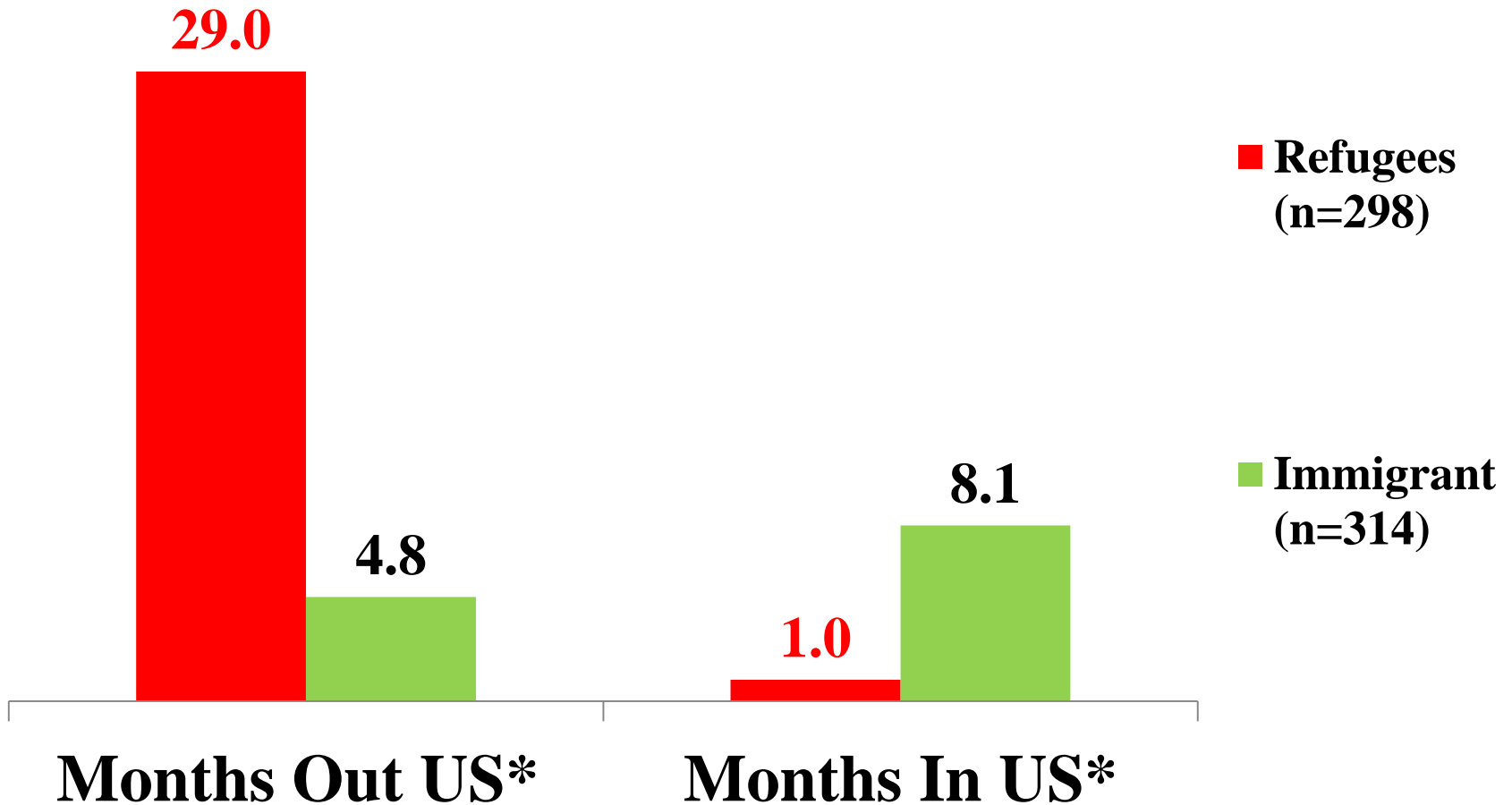
**Significant Demographic Variables
among Study Population ($P < 0.001$)**



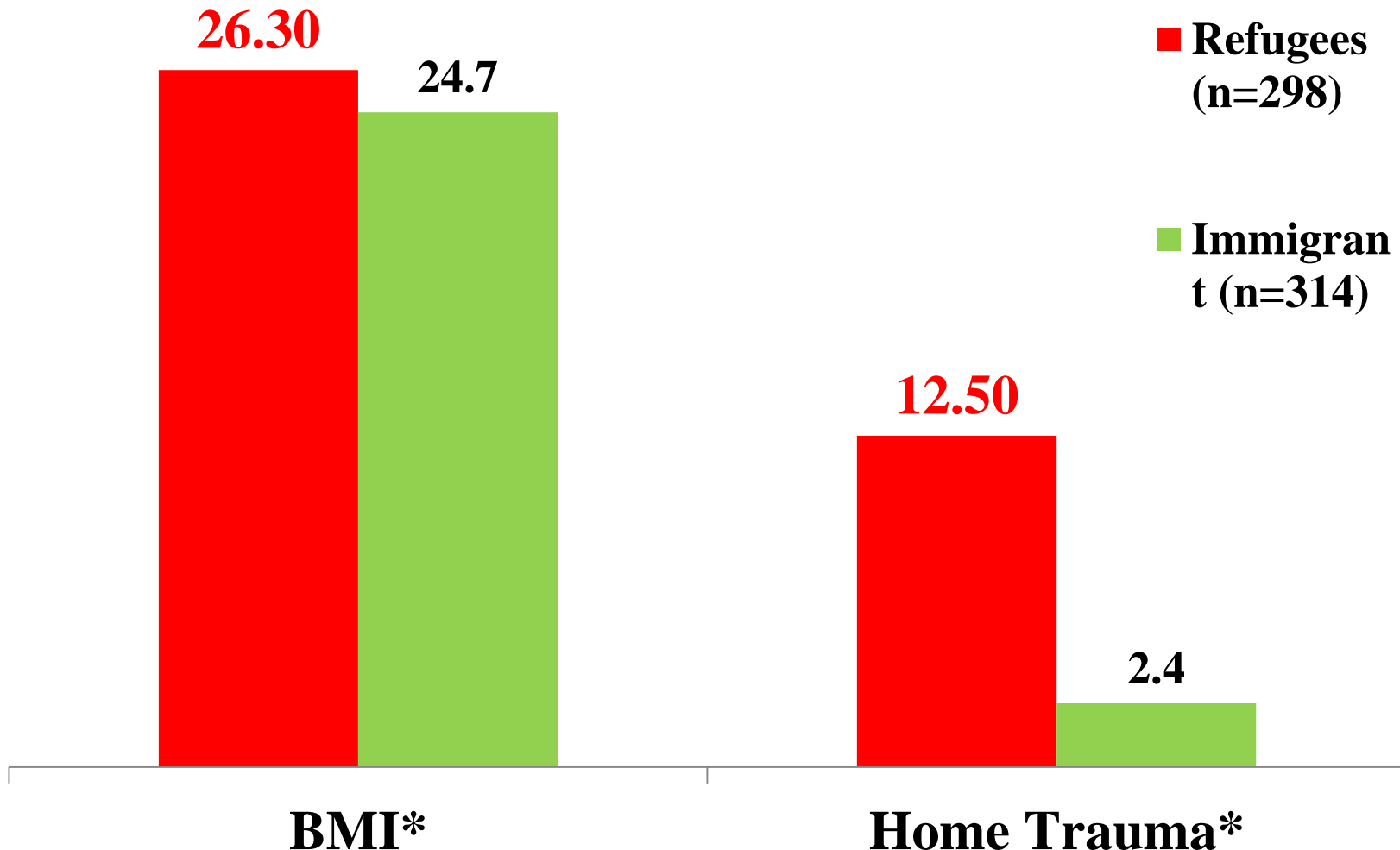
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Variable	Immigrant (n=313)	Refugees (n=298)
Marital Status		
Single /never married	90(29%)	132(44%)
Married/Other	224(71%)	166(56%)
Education		
High School or Less	170(54%)	212(71%)
Greater than High School	144(46%)	85(29%)

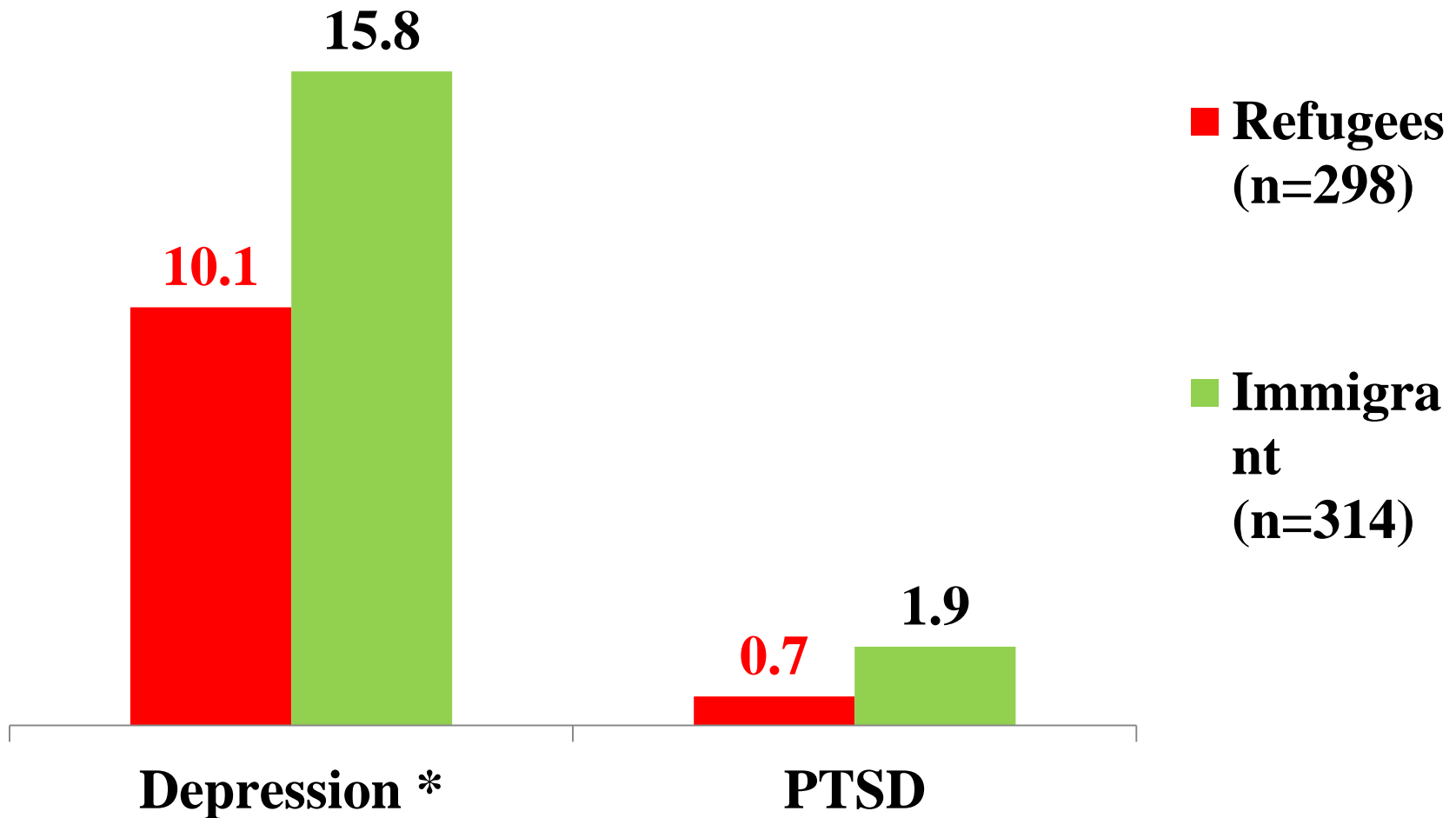
**Mean months of Period Spent
by Study Group *P < 0.001**



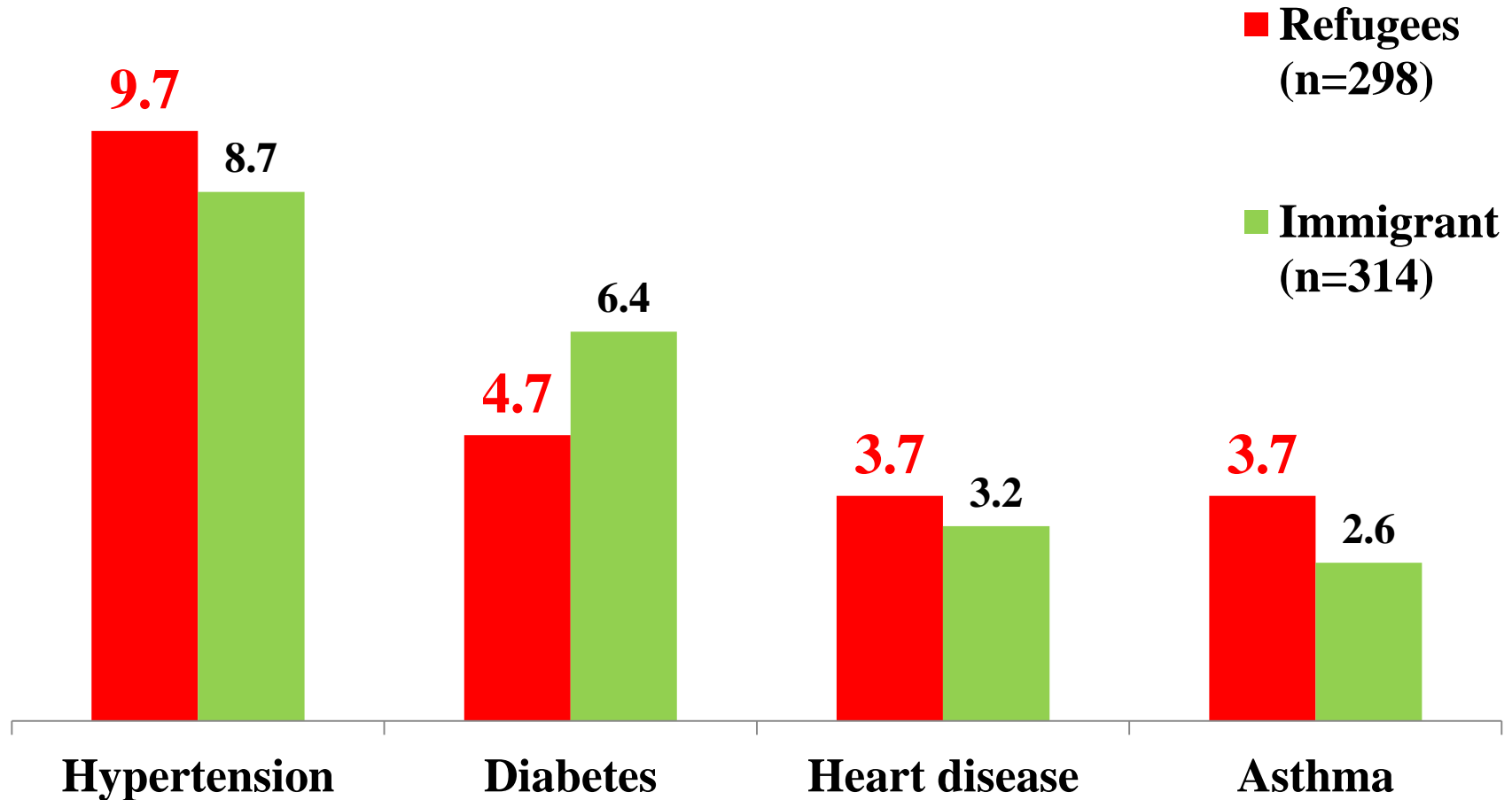
Mean Scale of Certain Variables among Study Population * $P < 0.001$



Prevalence of Mental Illnesses among Study Population * $P < 0.05$



Prevalence of Chronic Diseases among Study Population $P = n.s.$ for each



Binary Logistic Regression Analysis to Predict Risk Factors for **Hypertension**



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Likelihood of having Hypertension	Sig.	Odds Ratios	95% C.I.for OR	
			Lower	Upper
Age	.000	1.1	1.07	1.19
Have high Cholesterol	.021	2.9	1.18	7.36
BMI	.001	1.1	1.05	1.19
Back Home Trauma	.011	1.2	1.04	1.31
Immigrants vs Refugees {R}	.051	6.7	0.99	44.81
Depression	.288	1.01	0.95	1.19
PTSD	.339	1.03	0.97	1.09

Variable(s) entered on analysis: Age, Sex, Marital, Education, Health Insurance, Country of origin, Cholesterol, Tobacco, Alcohol, BMI, Back Home Trauma, Depression, PTSD, **Refugees/Immigrant**, Months out US, Months in US, Current Stress, Diabetes, Hypertension, Asthma.

Binary Logistic Regression Analysis to Predict Risk Factors for **Heart Disease**

Likelihood of having Heart Disease	Sig.	Odds Ratios	95% C.I.for OR	
			Lower	Upper
Have high Cholesterol	.007	8.5	1.80	39.70
Smoke Tobacco	.046	5.0	1.03	24.77
Asthma	.018	13.9	1.57	123.30
Immigrants vs Refugees {R}	.650	2.1	0.09	51.56
Depression	.609	1.048	0.88	1.26
PTSD	.549	1.025	0.95	1.11

Variable(s) entered on analysis: Age, Sex, Marital, Education, Health Insurance, Country of origin, Cholesterol, Tobacco, Alcohol, BMI, Back Home Truma, Depression, PTSD, Refugees/Immigrant, Months out US, Months in US, Current Stress, Diabetes, Hypertension, Asthma.

Binary Logistic Regression Analysis to Predict Risk Factors for **Diabetes Mellitus**



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Likelihood of having Diabetes Mellitus	Sig.	Odds Ratios	95% C.I.for OR	
			Lower	Upper
Age	.000	1.1	1.07	1.20
Immigrants vs Refugees [R]	.996	1.0	0.13	7.99
Depression	.856	0.9	0.85	1.13
PTSD	.883	0.9	0.92	1.07

Variable(s) entered on analysis: Age, Sex, Marital, Education, Health insurance, Country of origin, Cholesterol, Tobacco, Alcohol, BMI, Back Home Trauma, Depression, PTSD, Refugees/Immigrant, Months out US, Months in US, Current Stress, Diabetes, Hypertension, Asthma.

Binary Logistic Regression Analysis to Predict Risk Factors for **Asthma**



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Likelihood of having Asthma	Sig.	Odds Ratios	95% C.I.for OR	
			Lower	Upper
Age	.028	1.1	1.01	1.14
Heart disease	.034	6.6	1.15	37.99
Immigrants vs Refugees{R}	.996	1.0	0.13	7.99
Depression	.764	1.025	0.87	1.20
PTSD	.477	.962	0.87	1.07

Variable(s) entered on analysis: Age, Sex, Marital, Education, Health Insurance, Country of origin, Cholesterol, Tobacco, Alcohol, BMI, Back Home Trauma, Depression, PTSD, Refugees/Immigrant, Months out US, Months in US, Current Stress, Diabetes, Hypertension, Asthma.

Binary Logistic Regression Analysis to Predict Risk Factors for **One or more chronic diseases**

Likelihood of having One or more chronic diseases	Sig.	Odds Ratios	95% C.I. for OR	
			Lower	Upper
Age	.000	1.1	1.08	1.16
Have high Cholesterol	.005	3.1	1.39	6.80
BMI	.020	1.1	1.01	1.11
Immigrants vs Refugees {R}	.506	1.6	0.41	6.09
DepressionSum	.550	.97	0.88	1.06
PTSD_Scale	.080	1.04	0.99	1.09

Variable(s) entered on analysis: Age, Sex, Marital, Education, Health insurance, Country of origin, Cholesterol, Tobacco, Alcohol, BMI, Back Home Trauma, Depression, PTSD, Refugees/Immigrant, Months out US, Months in US, Current Stress,

Structure Equation Modle (SEM)



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- **Now we are working on Path analysis or what is called “Structure Equation Model (SEM)” to examine if there is a link between Mental Disorders and any of the four Chronic Diseases**
- **Unfortunately till now we did not finish the analysis**

Binary Logistic Regression Analysis to Predict Risk Factors for **Current Self-Rated Health**

Likelihood of having Excellent to Good Health	Sig.	Odds Ratios	95% C.I.for OR	
			Lower	Upper
Months In US (-B)	.020	0.9	0.74	0.97
Depression (- B)	.001	0.8	0.75	0.93
Immigrants vs Refugees{R}	.053	6.8	0.97	46.95
DepressionSum	.550	.97	0.88	1.06
PTSD_Scale	.080	1.04	0.99	1.09

Variable(s) entered on analysis: Age, Sex, Marital, Education, Health insurance, Country of origin, Cholesterol, Tobacco, Alcohol, BMI, Back Home Trauma, Depression, PTSD, Refugees/Immigrant, Months out US, Months in US, Current Stress,

Binary Logistic Regression Analysis to Predict Risk Factors for **Current Self-Mental Health**

Likelihood of having Excellent to Good Health	Sig.	Odds Ratios	95% C.I. for OR	
			Lower	Upper
Immigrants vs Refugees[R]	.016	8.9	1.51	52.91
Month in US (- B)	.012	0.9	0.75	0.97
Depression (- B)	.000	0.7	0.66	0.82
PTSD (- B)	.011	0.9	0.88	0.98

Variable(s) entered on analysis: Age, Sex, Marital, Education, Health insurance, Country of origin, Cholesterol, Tobacco, Alcohol, BMI, Back Home Trauma, Depression, PTSD, Refugees/Immigrant, Months out US, Months in US, Current Stress,

Conclusion



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- ❖ Our hypothesis was **rejected** as there were no impact of mental illnesses on any single chronic disease studied [hypertension, heart disease, diabetes and asthma]
- ❖ There were **no significant** differences in any of the chronic diseases studied between **Refugees** and **Immigrants**
- ❖ The predictor risk factors for each of the chronic diseases was identified.

Conclusion



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- ❖ There were **significant** difference between Refugees and Immigrants when they rated themselves in one year time for both **General Health** and **Mental Health**.
- ❖ There were **significant** correlation between SRH and SMH when tested Refugees only or Immigrants only.

Acknowledgments



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THANK YOU

